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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

OWENS, DOUGLAS W

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/670,210

Applicant(s)

GATES ET AL.

Examiner

Douglas W Owens

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 11-25 is/are rejected.
- 7) ☒ Claim(s) 2-10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/26/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claim 25 is objected to because of the following informalities: in line 1 of the claim, "referenec" should be replaced with -reference-. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim requires that a dielectric layer be disposed between the dielectric material and the I/O members. The scope of the claim is nebulous, since there is no mention of a dielectric layer or an I/O member in claim 16 or the claims it depends from.

4. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: The structural relationship of the dielectric material first mentioned in line 1 of the claim. The first dielectric layer must be disposed between the dielectric material and the first I/O member. However, there is no recitation as to where the dielectric material is disposed

in relation to other elements of the semiconductor package. Accordingly, it is not possible to determine the position of the first dielectric layer.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 14, 15, 17, 19, 20 and 21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 – 3 of U.S. Patent No. 6,724,077. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons:

Regarding claim 14, claim 1 of the patent recites the limitations:

“a first dielectric member”;

“an electrically conductive reference member coupled to a first surface of the first dielectric member, the reference member defining a current path for a reference signal”;

and

“a first plurality of electrically conductive I/O members coupled to a second surface of the first dielectric member...the first I/O members defining current paths for a corresponding first plurality of I/O signals.

Claim 1 further recites the limitation, “...the dielectric members and the I/O members defining a multi-signal bus bar...”, which correlates to the preamble of claim 14 of the instant application.

Regarding claim 15, the patent recites the same limitations.

Regarding claim 17, claim 2 of the patent is identical to this claim.

Regarding claim 19, claim 3 of the patent recites the limitation, “...wherein the bus bar has an inductance that is controlled to a predetermined inductance...”

Regarding claims 20 and 21, claim 1 clearly recites each and every limitation cited in claims 20 and 21 of the instant application.

7. Claim 18 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,724,077 in view of US Patent No. 4,381,423 to Taylor.

Claim 1 of the patent requires that the members are coupled to the dielectric member. Claim 1 of the patent does not recite the requirement that the members are bonded with an adhesive material. Taylor discloses that a bus bar (I/O member, conductive reference member) can be coupled to a dielectric using an adhesive material (See Claim 2, for example). It would have been obvious to one of ordinary skill in the art to incorporate the teaching of Taylor into the device claimed in the patent, since it is

desirable to use reliable methods of bonding the members to the dielectric member, such as adhesive bonding.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

9. Claims 1, 11, 12, 13, 23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by US patent No. 6,388,207 to Figueroa et al.

Referring to Claims 1: Figueroa et al. disclose a semiconductor package comprising:

a semiconductor die having an integrated circuit (IC) (Figure 4 (50) and Abstract);

a substrate having a die side (60) coupled to the IC; and

a plurality of multi-signal bus bars (Figures 2, 3, and 4 (61), (62), (63), (64))

coupled to a socket side of the substrate (Figure 3), the bus bars enabling input/output (I/O) signals to be transported between the substrate and a socket (Col. 5, lines 34 - 48).

Referring to Claim 11: Figueroa et al. disclose a semiconductor package, as recited above, further disclosing wherein the multi-signal bus bars have a substantially planar geometry (Figure 2 in conjunction with Col. 6, lines 43 - 47).

Referring to Claim 12: Figueroa et al. disclose a semiconductor package, as recited above, further disclosing wherein the substrate includes: a plurality of die-side contact pads (Figure 4 (74)) a plurality of board-side contact pads (Figure 4 (79)), and a base (60) having a plurality of traces (75, 76, 77, 78) and vias (88) interconnecting the die-side contact pads and the board-side contact pads (Col. 6, lines 13 – 24).

Referring to Claim 13: Figueroa et al. disclose a semiconductor package, as recited above, further disclosing wherein the IC is a computer processor (Col. 4, lines 15 -24).

Referring to Claim 23: Figueroa et al. disclose a method of fabricating a multi-signal bus bar, the method comprising:

providing a dielectric member (70, 98, 97);

coupling an electrically conductive reference member ((61); Col. 5, lines 38 – 41) to a first surface of the dielectric member, the reference member defining a current path for a reference voltage signal; and

coupling a plurality of electrically conductive I/O (63) to a second surface of the dielectric member such that the I/O members define current paths for a corresponding plurality of I/O signals.

Referring to Claim 24: Figueroa et al. disclose a method of fabricating a multi-signal bus bar further including coupling the I/O members at a predetermined spacing

such that the I/O members are electrically isolated from one another. Since the I/O members are not in contact with each other, it can be said that they are electrically isolated from one another.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Figueroa et al.

12. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Figueroa et al. as applied to claim 23 above, and further in view of US Patent No. 4,381,423 to Taylor.

Figueroa et al. do not disclose a method further including bonding the I/O and reference members to the dielectric member with an adhesive material. Taylor discloses bonding an I/O member to a dielectric using an adhesive material (See Claim 2, for example). It would have been obvious to one of ordinary skill in the art to incorporate the teaching of Taylor into the method taught by Figueroa et al., since it is desirable to use reliable methods of bonding the reference member to the dielectric member, such as adhesive bonding.

Allowable Subject Matter

13. Claims 2 – 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach, alone or in combination, a semiconductor package including substrate, as cited in claim 1, and a first dielectric member, as cited in claim 2, wherein “an electrically conductive reference member [is] coupled to a first surface of the first dielectric member” and “a first plurality of electrically conductive I/O members coupled to a second surface of the first dielectric member”.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas W Owens whose telephone number is 571-272-1662. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Eddie C Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Douglas W. Owens". The signature is fluid and cursive, with the first name "Douglas" being the most prominent part.

Douglas W. Owens
Patent Examiner